REMARKS

Claims 1-20 stand rejected stand rejected under 35 U.S.C. §103(a) as being unpatentable over International Publication under the Patent Cooperation Treaty to Tang, et al.[1] ("Tang") in view of U.S. Pat. No. 5,740,406 to Rosenthal, et al ("Rosenthal").

Claims 1-13 and 15-19 have been amended to clarify the claimed subject matter. Applicant respectively traverses the rejections.

Claim Rejections - 35 U.S.C. §103(a)

First, to establish a prima facie case of obviousness, there must be some suggestion or motivation to modify the reference or to combine reference teachings. MPEP 2143. According to the Office Action, one of ordinary skill would be motivated to modify Tang with the teachings of Rosenthal (disclosed at column 5, lines 52-67 and column 17 lines 4-18) by reason of the Rosenthal disclosure that "it is another object of the present invention to provide optimal use of FIFO buffers for buffering write operations to input/output devices." Applicant respectfully submits, however, that the mere statement of a general objective, without more, does not provide a suggestion to combine the specific Rosenthal disclosures with the Tang reference. Moreover, this "statement of object" relates to a teaching of Rosenthal that is quite different from those cited by the Examiner.

The teachings of Rosenthal that the Examiner cites are:

1)   "Decoding circuitry decodes the address by reviewing a number of the highest order bits,"[2]

2)   "An arrangement using a smaller number of FIFO buffers 39 than one buffer for each application program . . . could also be used as long as the address of the FIFO buffer is mapped to only one application program at a time,"[3]

3)   "By ascertaining the space available in the FIFO buffer 39 before transferring a sequence of commands, the application can know that sufficient space will be available for" a burst transfer mode operation.[4]

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[1] International Publication Number WO 03/050684 A1.
[2] Rosenthal, col. 5, ll. 55-57 (emphasis added).
[3] Rosenthal, col. 5, ll. 62-67 (emphasis added).
[4] Rosenthal, col. 17, lines 12-16.

Tang is concerned with "addressing the potential for FIFO overflow and the resulting loss of data." Tang "teaches a FIFO memory with overflow protection . . . a FIFO memory receives data transfer requests before data is stored in the FIFO memory. Data transfer requests specify sizes of the data transfer . . . to enable determination of whether the FIFO memory has enough space to accommodate the data."[5] According to Tang, the described systems and techniques "may allow the use of a single FIFO memory."[6]

Rosenthal is also concerned with "controlling the flow of data so that this storage is not exhausted."[7] Rosenthal discloses that the "objects of the present invention are realized in a system . . . in which each FIFO buffer accepts data from only one application program"[8] and "in one embodiment, the number of FIFO buffers is reduced by an arrangement which provides for switching FIFO buffers between different application programs."[9] Apparently referring to this embodiment, Rosenthal explains "in one embodiment of the invention" a requirement is placed "on an application program attempting to access an input/output" device.[10] This requirement is that before writing any data, the application program must "first determine whether space is available in the FIFO unit."[11]

Thus, it would appear that Rosenthal discloses that the object of providing "optimal use of FIFO buffers" is met by an application program determining "whether space is available in the FIFO unit." As Tang also discloses determining "whether the FIFO memory has enough space to accommodate the data," one of ordinary skill would not appreciate a need to modify Tang with a teaching from Rosenthal that it already embodies. Moreover, the use of a multiplicity of FIFO buffers is not a concern of Tang as this reference teaches the use of a single FIFO memory.

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[5] Tang, [0005]
[6] Tang, [0007]
[7] Rosenthal, cols. 1-2, lines 63-4.
[8] Rosenthal, col. 2, lines 24-27.
[9] Rosenthal, col. 2, lines 34-36.
[10] Rosenthal, col. 16, lines 34-40.
[11] Rosenthal, col. 16, lines 41-42.

Accordingly, one of ordinary skill would not be motivated to modify Tang with the teachings of Rosenthal that the Examiner cites.

Second, while applicant agrees that Rosenthal does disclose "decoding circuitry," such circuitry performs a process that is quite different and readily distinguishable from processes that may be performed by a decoder disclosed in applicant's specification. Rosenthal explains that the "decoding circuitry *selects one of the FIFO buffers 39 using the upper seven bits* of the twenty-three address bits."[12] Thus, Rosenthal discloses that each FIFO buffer 39 is identified by an address and the Rosenthal decoding circuit merely selects one of the FIFO buffers using such address. It would appear that what Rosenthal refers to as "decoding" is nothing more than reviewing seven address bits in a 23 bit "address."

In contrast to the Rosenthal decoder, the amended claims provide that if a particular address is within a range of multiple addresses, then whenever an address is determined to be within the range, a unit causes a memory that is identified by and accessible only through a single address to be accessed, thereby permitting the memory to be accessed using any one of the addresses in the range of multiple addresses.

Conclusion

To establish a prima *facie case* of obviousness, all the claim limitations must be taught or suggested by the prior art. MPEP 2143.03. The combination of the Tang and Rosenthal references do not together disclose each and every element of amended independent claims 1, 5, 9, and 13. In addition, even if these references disclose all of the claim limitations, there is no suggestion to combine the references. Each of the remaining claims depends from one of the independent claims and is not anticipated for the same reason that the independent claims are not anticipated. Accordingly, claims 1-20 are not unpatentable under 35 U.S.C. §103(a).

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[12] Rosenthal, col. 9, ll. 6-8 (emphasis added).

Therefore, claims 1-20 are in condition for allowance. Applicant respectively requests that claims 1-20 be allowed, and this application be passed to issue. If the Examiner deems that an interview would be helpful, the Examiner is respectfully invited to contact Applicant's attorney, Richard Wilhelm (48,786) at 503-635-1187.

Respectfully submitted,

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